

**Chapter 122. Texas Essential Knowledge and Skills for Family and Consumer  
Sciences Education**  
**Subchapter E. Nutrition and Wellness, Food Science and Technology; High  
School**

*Statutory Authority: The provisions of this Subchapter E issued under the Texas Education Code, §28.002, unless otherwise noted.*

**§122.41. Implementation of Texas Essential Knowledge and Skills for Family and Consumer Sciences Education, Nutrition and Wellness , Food Science and Technology; High School.**

The provisions of Chapter 122, Subchapters B-K, shall supersede §75.83 of this title (relating to Vocational Family and Consumer Sciences) beginning September 1, 1998.

*Source: The provisions of this §122.41 adopted to be effective September 1, 1998, 22 TexReg 5031.*

**§122.43. Food Science and Technology (One-Half Credit).**

- (a) General requirements. This technical laboratory course is recommended for students in Grades 10-12. The recommended prerequisite for this course is Nutrition and Food Science.
- (b) Introduction. Principles of food science, technology, and nutrition are interdependent with growth, development, health, and wellness. Individuals utilize these principles to make informed choices, promote good health, and pursue careers related to food science, technology, and nutrition.

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(c) Knowledge and skills.

(1) **Food science principles.** The student relates nutritional adequacy to personal health.

The student is expected to:

- (A) describe the functions of nutrients in the body;
- (B) analyze the relationship of nutrients and other factors to diet-related diseases and disorders;
- (C) relate cultural food patterns to personal health; and
- (D) analyze culturally diverse food choices that are nutritionally adequate.

(2) **Food science principles.** The student analyzes ways to maximize quality nutrition.

The student is expected to:

- (A) determine various methods for retaining nutrients and improving nutrient content in foods; and
- (B) describe the impact of new technology on food science.

(3) **Food science principles.** The student evaluates a variety of changes, including chemical and physical, that affect food product quality.

The student is expected to:

- (A) apply science process skills in conducting laboratory activities;
- (B) explain the chemical reactions that occur during food processing;

- (C) compare the effects of various cooking utensils and equipment on food products;
- (D) evaluate the effect of various temperatures, manipulative procedures, and leavening agents on food products; and
- (E) apply the principles of food preparation to preserve quality and nutritive value of foods.

(4) **Nutrition and health.** The student uses knowledge of digestion and metabolism to establish lifelong habits of good nutrition and physical fitness.

The student is expected to:

- (A) describe the processes of digestion and metabolism;
- (B) explain basal and activity metabolisms and factors that affect each; and
- (C) apply knowledge of digestion and metabolism when making decisions related to food intake and physical fitness.

(5) **Nutrition and health.** The student utilizes available technology to plan diets appropriate for long-term health and wellness.

The student is expected to:

- (A) plan diets appropriate to life cycle, activity level, culture, gender, and food budget;
- (B) develop examples of therapeutic diets;
- (C) explain consequences of eating disorders on long-term health;
- (D) devise strategies to deal with special dietary considerations including needs of women during pregnancy and lactation; and
- (E) utilize various guidelines and technology in evaluating diets.

(6) **Nutrition and health.** The student evaluates resources in nutrition and food science.

The student is expected to:

- (A) evaluate resources that provide reliable nutrition information; and
- (B) propose ways to disseminate reliable nutrition information.

(7) **Food technology.** The student evaluates technologies used in food processing and product development.

The student is expected to:

- (A) summarize new research and trends;
- (B) assess methods of food processing and their impact on product quality and nutrition;

- (C) explain the roles of additives in food processing; and
- (D) contrast the effects of packaging on the properties and quality of the food and on the environment.

(8) **Food technology.** The student evaluates safety and sanitation standards.

The student is expected to:

- (A) describe properties of microorganisms that cause food spoilage and food-borne illness;
- (B) outline sanitation and food-handling practices that can help prevent food contamination and food-borne illness;
- (C) describe functions of government agencies that regulate food quality, wholesomeness, and safety; and
- (D) analyze industry quality control standards and skills related to safety and safe working conditions.

(9) **Food technology.** The student differentiates the effects of technology on nutrition, the food supply, marketing, and distribution.

The student is expected to:

- (A) determine the effects of technological advances on food availability;
- (B) interpret how consumer choice is influenced by market research and marketing in the field of food science and nutrition;
- (C) summarize the relationship of entrepreneurial opportunities, technological advances, and marketing research; and
- (D) determine the effects of advancements in food science and technology on family strengths and the welfare of family members.

(10) **Food technology.** The student utilizes research skills in conducting and evaluating scientific research in food science.

The student is expected to:

- (A) analyze various research methods used in food science, technology, and nutrition;
- (B) describe ways to choose topics for research in food science, technology, and nutrition;
- (C) evaluate research projects related to a current issue in food science, technology, and nutrition; and

- (D) utilize research methods to create projects related to a current issue in food science, technology, and nutrition.

(11) **World food supply.** The student contrasts basic physical survival with quality of life.

The student is expected to:

- (A) describe the relationship of good health and nutrition to job performance and relationships;
- (B) explain the relationship of the food supply to quality of life;
- (C) explain how the long-term effects of hunger affect a society and world progress; and
- (D) contrast the nutrition in developed and developing countries.

(12) **World food supply.** The student analyzes food supply, distribution, and nutrition from a global perspective.

The student is expected to:

- (A) analyze factors that influence the food chain, pricing, and choices;
- (B) determine the demands placed on food science and technology by American societal patterns;
- (C) describe technological, ecological, and sociological factors affecting world food supply;
- (D) explain the roles that world food trade policies and governments play in world progress related to nutrition;
- (E) describe international organizations dealing with world food supply and contributing to improved nutrition;
- (F) analyze the problems of world hunger; and
- (G) predict possible solutions to the problems of world hunger.

(13) **Career preparation.** The student determines opportunities and preparation requirements for careers in nutrition, food science, and food technology.

The student is expected to:

- (A) determine employment and entrepreneurial opportunities and preparation requirements for careers in nutrition, food science, and technology;
- (B) compare personal characteristics to those needed for careers in nutrition, food science, and technology; and

- (14) **Career preparation.** The student exhibits employability skills.
- (C) propose short-term and long-term career goals.
- The student is expected to:
- (A) describe management practices facilitating individuals assuming multiple family, community, and wage-earner roles;
  - (B) practice positive human-relations skills;
  - (C) demonstrate effective verbal, nonverbal, written, and electronic communication skills;
  - (D) demonstrate effective methods to secure, maintain, and terminate employment;
  - (E) identify ethical practices in the workplace; and
  - (F) practice problem solving, using leadership and teamwork skills.
- (15) **Career preparation.** The student completes a supervised career-connections experience applying knowledge and skills developed in the study of food science and technology.
- The student is expected to:
- (A) determine home and business applications of knowledge and skills developed in the study of food science and technology; and
  - (B) utilize a career-connections experience to demonstrate occupational applications of competencies developed in the study of food science and technology.

*Source: The provisions of this §122.43 adopted to be effective September 1, 1998, 22 TexReg 5031.*